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## NASA SCIENTIFIC BALLOON RESEARCHERS RECEIVE INTERNATIONAL PRIZE IN ASTROPHYSICS

Two researchers that led a NASA and National Science Foundation funded scientific balloon mission in Antarctica have been awarded the 2006 Balzan Prize in Astrophysics.

Andrew Lange, from the California Institute of Technology in Pasadena, and Paolo de Bernardis, from the Università di Roma La Sapienza in Rome, received the award from the International Balzan Foundation "for their contributions to cosmology, in particular the BOOMERANG Antarctic balloon experiment."

The "Balloon Observations of Millimetric Extragalactic Radiation and Geophysics" mission launched in 1998 recorded the first resolved images of the early universe. The images reveal the structure that existed in the universe when it was a tiny fraction of its current age and 1,000 times smaller and hotter than it is today.

Detailed analysis of the images has been essential to understanding some of cosmology's outstanding mysteries, including the nature of the matter and energy that dominate intergalactic space and whether space is "curved" or "flat."

The BOOMERANG Project obtained the images using a telescope suspended from a balloon that circumnavigated Antarctica in late 1998. Launched from McMurdo Station, the balloon carried the two-ton telescope to an altitude of almost 120,000 feet for more than 10 days. Novel detectors developed at NASA's Jet Propulsion Laboratory, Pasadena, Calif., recorded tiny temperature variations – less than 100 parts per million - in the afterglow of the Big Bang as the telescope scanned the sky.

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The BOOMERANG team is comprised of 36 team members from 16 universities and organizations in the United States, Canada, Italy and the United Kingdom. In addition to NASA and the National Science Foundation, the project also was supported by the Italian Space Agency, Italian Antarctic Research Programme and the University of Rome La Sapienza in Italy and the Particle Physics and Astronomy Research Council in the United Kingdom. Also, the U.S. Department of Energy's National Energy Research Scientific Computer Center provided supercomputing support.

The NASA's Wallops Flight Facility, Wallops Island, Va., manages NASA's Scientific Balloon Program for the Science Mission Directorate, Washington. NASA's Columbia Scientific Balloon Facility, Palestine, Texas, conducts balloon launch operations. Antarctica ground and air operations support at McMurdo Station is provided by the National Science Foundation's Office of Polar Programs.

For information about NASA and agency programs, visit:

<http://www.nasa.gov/home>

For information and images on BOOMERANG, visit:

<http://cmb.phys.cwru.edu/boomerang/>

For information on scientific research in Antarctica, visit:

<http://nsf.gov/dir/index.jsp?org=opp>

For information on the Balzan Prize, visit:

<http://www.balzan.it>